Connector Pin Assignments

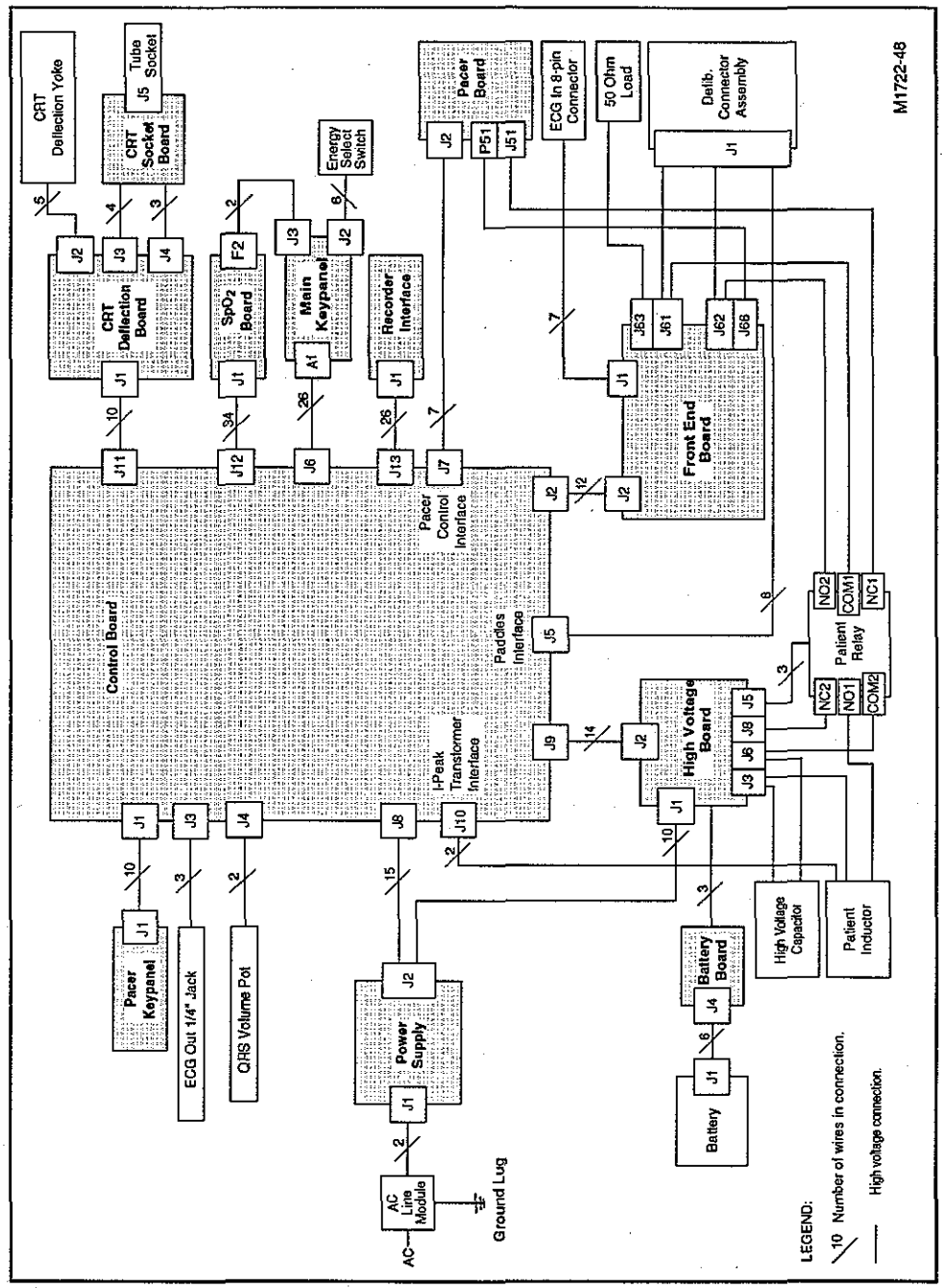
The tables in this appendix list the pin assignments for each connector on assemblies in the instrument. Following each table is a dictionary of the signal names listed in the table. Some signal names begin with a letter that indicates the signal type:

c	Connector signals. These have been conditioned for EMI purposes.
f	Filtered signals. These signals have been low-pass filtered to minimize the high frequency components that they would otherwise contain.
n	Active low signal.
p	Pulsed signals (except clock signals, which usually have 'clk' embedded in their names.)

Refer to Figure A-1 to see how the assemblies interconnect. Pin assignments are given for these assemblies:

- Control board
- Front end board
- ECG Out connector
- QRS volume control
- Defibrillator connector
- Keypanel board
- Pacer keypanel board
- Pacer board
- Power supply board
- High voltage board
- Patient inductor
- CRT deflection board
- SpO_2 board
- Recorder interface board
- Battery board
- Battery
- HV capacitor
- Patient relay
- 50-ohm load
- ECG In connector
- AC line module
- Energy Select switch
- Beeper

Figure A-1



Interconnect Block Diagram

Control Board Connectors

Refer to Figure A-1 for the control board connector locations. Connectors on the control board are listed in Table A-1.

Table A-1 **Control Board Connections**

Control Board	Via Cable Assembly	Connects To	Reference
J1	M1722-61605	Pacer keypanel board	Table A-2
J2	M1722-61611	Front end board	Table A-3
J3	M1722-61624	ECG Out connector	Table A-4
J4	M1722-61910	QRS volume control	Table A-5
J5	p/o M1722-61626	Defibrillator connector	Table A-6
J6	M1722-60195	Keypanel board	Table A-7
J7	M1722-61617	Pacer board	Table A-8
J8	M1722-61606	Power supply board	Table A-9
J9	M1722-61610	High voltage board	Table A-10
J10	p/o M1722-82800	Patient inductor	Table A-11
J11	M1722-61619	CRT deflection board	Table A-12
J12	M1722-61628	SpO_2 board	Table A-13
J13	M1722-61618	Recorder interface board	Table A-14
J14	M1722-61632	Beeper	

Table A-2 **Control Board J1 to Pacer Keypanel Board J1**

Pin	Signal
1	GROUND
2	nPONOFF
3	PACONLED
4	nPMODE
5	nPACPRES
6	nPRATEINC
7	nPRATEDEC

Table A-2 **Control Board J1 to Pacer Keypanel Board J1**

Pin	Signal
8	nPCURINC
9	nPCURDEC
10	nPSTSTOP

NOTE Each pin on the control board J1 connects to a pin with the same number on the pacer keypanel board J1.

Signal	Definition
nPONOFF	Pacer On/Off.
PACONLED	Pacer On LED. Drives the (Pacer On) LED on the pacer keypanel. The LED is on when the pacer function is turned on.
nPMODE	Pacer Mode.
nPACPRES	Pacer Present.
nPRATEINC	Pacer Rate Increase.
nPRATEDEC	Pacer Rate Decrease.
nPCURINC	Pacer Current Increase.
nPCURDEC	Pacer Current Decrease.
nPSTSTOP	Pacer Start Stop.

Table A-3 **Control Board J2 to Front End Board J2**

Pin	Signal
1	CGND
2	nFESENP
3	nFESENL
4	FESI
5	FESO
6	FEPEN
7	FELEN

Table A-3 **Control Board J2 to Front End Board J2**

Pin	Signal
8	FESCLKI
9	GND
10	FECHPCLK
11	FE5V
12	FEPWRCLK

NOTE

Each pin on the control board J2 connects to a pin with the same number on the front end board J2.

Signal	Definition
nFESENP	ECG Front End Serial Enable Paddles.
nFESENL	ECG Front End Serial Enable Leads.
FESI	Front End Serial Data Input.
FESO	Front End Serial Data Output.
FEPEN	Front End Paddles Enable.
FELEN	Front End Leads Enable.
FESCLKI	Front End Serial Clock Input.
FECHPCLK	Front End Chip Clock. Clock supplied to the ECG ASIC (2.048 MHz).
FE5V	5V to front end board.
FEPWRCLK	Front End Power Clock. The switching frequency of the front end power supplies (32 kHz).

Table A-4 **Control Board J3 to ECG Out Connector**

Pin	Signal
1	ECGSHIELD (connects to sleeve)
2	ECGOUT (connects to tip)
3	INSTATE (connects to ring)

Signal	Definition
ECGSHIELD	Connects to the shield of the ECG Out cable.
ECGOUT	ECG Out signal; 1V/1mV of the monitored source.
INSTATE	Instrument State. Indicates leads status: 0V = Off; 1.5V = On and Leads Off; 5V = On and Leads On.

Table A-5 **Control Board J4 to QRS Volume Control**

Pin	Signal
1	GROUND (connects to ground)
2	QRSCNTL (connects to wiper)

Signal	Definition
QRSCNTL	Used to set the volume level of the QRS tone.

Table A-6 **Control Board J5 to Defibrillator Connector J1**

Pin	Signal
1	nPADCHG
2	nDISCHGA
3	CHDONELED
4	GND
5	PAD5V
6	CGND
7	PCIDRV
8	nDISCHGS

NOTE

Each pin on the control board J5 connects to a pin with the same number on the defibrillator connector J1.

Signal	Definition
nPADCHG	Paddles Charge. Signal generated by the paddles charge button—active low. Initiates a charge operation.
nDISCHGA	Discharge Apex. A signal asserted when the apex paddle shock button is pressed.
CHDONELED	This signal is used for paddle type identification and it lights the Charge Done LED in the apex paddle.
PAD5V	5V supply for the paddles.
PCIDRV	This signal drives the PCI LED bar graph on the sternum paddle.
nDISCHGS	Discharge Sternum. A signal asserted when the sternum paddle shock button in pressed.

Table A-7 **Control Board J6 to Keypanel Board A1**

Pin	Signal	Pin	Signal
1	GND	14	CHDLED
2	nCHARGEKEY	15	HWID
3	nSYNCDEFIB	16	nPTAKEY
4	nPRINTSTOP	17	SYNCLED
5	nMARKEY	18	nHISTKEY
6	nLEADSKEY	19	CGROUND
7	nREVIEWKEY	20	N/C
8	nALARMKEY	21	ENSEL(0)
9	nACONLED	22	ENSEL(1)
10	BCHGLED	23	ENSEL(2)
11	GND	24	ENSEL(3)
12	nECGINC	25	nON
13	nECGDEC	26	GND

NOTE

Each pin on the control board J6 connects to a pin with the same number on the keypanel board a1.

Signal	Definition
nCHARGE KEY	A signal generated by the (Charge) key on the keypanel—active low. Initiates a charge operation.
nSYNCDEFIB	A signal generated by the (Sync) key on the keypanel—active low. Toggles between sync and defib operation modes.
nPRINTSTOP	A signal generated by the (Record) key—active low. Starts and stops the recorder.
nMARKEY	A signal generated by the (Mark) key—active low. Prints a mark.
nLEADSKEY	A signal generated by the (Lead Select) key—active low. Selects the active lead.

Signal	Definition
nREVIEW KEY	A signal generated by the (• Review) key—active low. Left side of key.
nALARMKEY	A signal generated by the (HR Alarm) key—active low. Controls HR Alarm functions.
nACONLED	AC On LED. Lights when unit is plugged into AC power.
BCHGLED	Battery Charge LED. Lights when unit is plugged into AC power and battery is installed.
nECGINC	A signal generated by the (▼ ECG Size) key—active low. Left side of key.
nECGDEC	A signal generated by the (ECG Size▲) key—active low. Right side of key.
CHDLED	Charge Done LED. Lights the Charge Done LED in the apex paddle.
nPTAKEY	Reserved.
SYNCLED	This signal lights the (Sync) LED when the unit is in sync mode. Asserted high.
nHISTKEY	A signal generated by the (Review •) key—active low. Right side of (• Review •) key.
ENSEL(0), (1), (2), (3)	Energy Select. Four key bits set by the Energy Select control, which selects the charge level.
nON	This signal turns the instrument on—asserted low.

Table A-8 **Control Board J7 to Pacer Board J1**

Pin	Signal
1	PACEN
2	PACCUR
3	PACMES
4	GROUND
5	PACSYNCLK
6	HCVDC
7	HCRET

NOTE Each pin on the control board J7 connects to a pin with the same number on the pacer board J1.

Signal	Definition
PACEN	Pacer Enable. Enables power to the pacer.
PACCUR	Pacer Current. Sets pacer output current.
PACMES	Pacer Measurement. Output current measured by the pacer and returned to the defibrillator controller.
PACSYNCLK	Pacer Synchronous Clock. Synchronizes the pacer switching power supply to an even multiple of the ECG sample rate (96 kHz).
HCVDC	High Current VDC (VDC+). Supplies primary power to the pacer.
HCRET	High Current Return (VDC–). Return for HCVDC.

Table A-9 **Control Board J8 to Power Supply Board J2B**

Pin	Signal	Pin	Signal
1	HCRET	9	nPSON
2	PRN12V	10	VDC2
3	GROUND	11	SWADRIVE
4	12V	12	HCVDC
5	5V	13	HCRET
6	GND	14	HCVDC

Table A-9 **Control Board J8 to Power Supply Board J2B**

Pin	Signal	Pin	Signal
7	PSSYNCLK	15	HCRET
8	ACON		

NOTE

Each pin on the control board J8 connects to a pin with the same number on the power supply board J2B.

Signal	Definition
HCRET	Dedicated return lines for HCVDC.
PRN12V	Recorder 12 volt supply. Powers the stepper motor.
PSSYNCLK	Power supply synchronizing clock (96 kHz).
ACON	Indicates that the supply is plugged into AC power.
nPSON	Active low. Enables the DC/DC converter (+5V and +12V).
VDC2	A more filtered version of VDC for use in powering up start-up logic and static RAM. ORed with VBATT to form VBACKUP.
SWADRIVE	Controls Switch A; when asserted (high), switch A is closed.
HCVDC	High current VDC supply for recorder and pacer.
HCRET	High current return lines for HCVDC.

Table A-10 **Control Board J9 to High Voltage Board J2**

Pin	Signal	Pin	Signal
1	HVDISCH	8	QUALACON
2	DEFBSTAT	9	VCAP
3	SSRY	10	AGROUND
4	nCHGEN	11	VBATT
5	AGROUND	12	PRDRV
6	AGROUND	13	nBATPRES
7	OPNSFRLY	14	CHRATE

NOTE

Each pin on the control board J9 connects to a pin with the same number on the high voltage board J2.

Signal	Definition
HVDISCH	High Voltage Discharge. Logical NOR of nDICCH and nDISCHS.
DEFBSTAT	Defibrillator Status. A signal generated by the high voltage board to provide patient relay status.
SSRY	Reserved.
nCHGEN	Charge Enable. A signal asserted by the system gate array to initiate a charge cycle. Used in conjunction with CHRATE.
OPNSFRLY	Open Safety Relay. A signal asserted by the system gate array which removes the 47 kΩ safety resistor which is normally across the HV capacitor.
QUALACON	AC On logic signal which is active only when +5V is present.
VCAP	Voltage CAPacitor. The capacitor voltage that is sampled to monitor the energy present across the HV capacitor.
VBATT	Battery voltage.
PRDRV	Asserted by the system gate array to close patient relay, connecting the patient to the high voltage capacitor. Qualified with HVDISCH on the HV board.
nBATPRES	Battery Present signal. When battery is installed, this line is low.
CHRATE	Charge Rate. An analog signal used to set the charge rate. Used with CHGEN to initiate a charge cycle.

Table A-11 **Control Board J10 to Patient Inductor**

Pin	Signal
1	IPEAK5V
2	IPEAK

Signal	Definition
IPEAK5V	5 volt supply to the IPeak transformer.
IPEAK	IPeak measurement signal from the IPeak transformer.

Table A-12 **Control Board J11 to CRT Deflection Board J1**

Pin	Signal
1	GND
2	VSYNC
3	GND
4	FBVIDEO
5	GND
6	HBVIDEO
7	GND
8	HSYNC
9	CRT12V
10	CRT12V

NOTE

Each pin on the control board J11 connects to a pin with the same number on the CRT deflection board J1.

Signal	Definition
VSYNC	Vertical Sync signal.
FBVIDEO	Full Bright Video signal.
HBVIDEO	Half Bright Video signal.
HSYNC	Horizontal Sync signal.
CRT12V	12 volt supply for the CRT.

Table A-13 **Control Board J12 to SpO_2 Board P1**

Pin	Signal	Pin	Signal
1	GND	18	nMWR
2	OAD(0)	19	GND
3	OAD(1)	20	CGND
4	GND	21	GND
5	OAD(2)	22	nOPTRDY
6	OAD(3)	23	GND
7	GND	24	nOPTINT0
8	OAD(4)	25	nOPTINT1
9	OAD(5)	26	nOPTINT2
10	GND	27	+DIGBACKUP
11	OAD(6)	28	nOPTSEL0
12	OAD(7)	29	+5V
13	GND	30	nOPTSEL1
14	OMALE	31	+12V
15	GND	32	nOPTSEL2
16	nMRD	33	nERAWRST
17	GND	34	nPRST

NOTE Each pin on the control board J12 connects to a pin with the same number on the SpO_2 board P1.

Signal	Definition
OAD(0), (1), (2), (3), (4), (5), (6), (7)	Monitor address data bus lower 8 bits.
OMALE	Monitor Address Latch Enable.
nMRD	Monitor Read Strobe.
nMWR	Monitor Write Strobe.
nOPTRDY	Option Ready Signal.

Signal	Definition
nOPTINT0, nOPTINT1, nOPTINT2	Interrupt signals from options 0, 1, and 2.
+DIGBACKUP	DIGital BACKUP. A 4.3V low current regulated supply for powering battery backed-up logic on the SpO_2 board.
nOPTSEL0, nOPTSEL1, nOPTSEL2	Option Select.
nERAWRST	Raw Reset. A reset signal from the control board to the option slot.
nPRST	Reset. A monitor processor-controlled reset signal.

Table A-14 **Control Board J13 to Recorder Interface Board J1**

Pin	Signal	Pin	Signal
1	PRN12V	14	nPHLAT
2	HCRET	15	nPAPOUT
3	PRN12V	16	TSENSE
4	HCRET	17	SWPRNVDC
5	MTRPH0	18	HCRET
6	MTRPH1	19	SWPRNVDC
7	MTRPH2	20	HCRET
8	MTRPH3	21	SWPRNVDC
9	PRN5V	22	HCRET
10	GND	23	SWPRNVDC
11	PCLK	24	HCRET
12	PDATA	25	CAL
13	nPHSTB	26	CGND

NOTE Each pin on the control board J13 connects to a pin with the same number on the recorder interface board J1.

Signal	Definition
PRN12V	Printer +12 volts. Used to power the stepper motor.
HCRET	High Current Return.
MTRPH0, 1, 2, 3	Stepper motor phase 0,1,2,3.
PRN5V	Supplies logic power to the recorder.
PCLK	Printer clock. Clocks data to the printhead.
PDATA	Printer data.
nPHSTB	Printhead Strobe. Enables the printhead dot printing. Duration of the strobe is controlled to compensate for printhead temperature and voltage.
nPHLAT	Printhead latch. Latches a column data of data into the printhead.
nPAPOUT	Paper Out. Conditioned signal that indicates the paper out condition.

Signal	Definition
TSENSE	Temperature SENSE. An analog signal generated by a temperature sensor on the recorder; varies the duty cycle for the printhead write.
SWPRNVDC	Switched printer VDC. A switched version of the VDC supply.
CAL	A voltage that encodes the printhead resistance; used to set the duty cycle for printhead writes.

Front End Board

These tables list the pin assignments for the connectors on the front end board. The connectors and the assemblies they connect to are listed in Table A-15; other tables list connector pin assignments.

Table A-15 Front End Board Connections

Front End Connector	Via Cable Assembly	Connects To	Reference
J1	M1722-61615	ECG In connector (8-pin)	Table A-16
J1	M1722-61614	ECG In connector (6-pin, option J02)	Table A-17
J1	M1722-61616	ECG In connector (12-pin, option J03)	Table A-18
J2	M1722-61611	Control board	Table A-3
J61	p/o M1722-82806	Defibrillator connector and patient relay	Table A-19
J62	p/o M1722-82806	Defibrillator connector and patient relay	Table A-19
J63	p/o M1722-60010	50-ohm load	Table A-19
J66	p/o M1722-60170	Pacer board	Table A-19

Table A-16 **Front End Board J1 to ECG In Connector (8-pin ECG)**

Front End Board J1		ECG In Connector	
Pin	**Signal**	**Pin**	**Signal**
1	LREF	4	Shield
2	RA	1	RA
3	LL	7	LL
4	LA	2	LA
5	V	6	Chest (5 wire)
6	RL	8	RL (5 wire)
7	LREF (Cable Shield)		

Table A-17 **Front End Board J1 to ECG In Connector (6-pin ECG)**

Front End Board J1		ECG In Connector	
Pin	**Signal**	**Pin**	**Signal**
1	Cable Shield	N/C	Shield
2	RA	A	RA
3	LL	C	LL
4	LA	B	LA
5	V	D	Chest (5 wire)
6	RL	E	RL (5 wire)
7	LREF	F	LREF

Table A-18 **Front End Board J1 to ECG In Connector (12-pin ECG)**

Front End Board J1		ECG In Connector	
Pin	Signal	Pin	Signal
1	cable Shield	N/C	Shield
2	RA	2	RA
3	LL	5	LL
4	LA	7	LA
5	V	6	Chest (5 wire)
6	RL	1	RL (5 wire)
7	LREF	C	LREF

Signal	Definition
RA	Right Arm.
LL	Left Leg.
LA	Left Arm.
V	Chest
RL	Right Leg.

Table A-19 **Front End Board J61, J62, J63, J65, J66**

Front End Board		Connects To
Pin	Signal	
J61A	STERNUM-1 (HV RED)	Defibrillator connector, J1-S, HI VOLTAGE—STERNUM
J61B	STERNUM-2 (HV RED)	Patient relay, OUTPUT + (COMMON 1)
J62A	APEX-1 (HV WHITE)	Defibrillator connector, J1-A, HI VOLTAGE—APEX
J62B	APEX-2 (HV WHITE)	Patient relay, OUTPUT - (N.O. 2)
J63	PADINPOCKETS (HV BLACK)	50-ohm load, TAP (paddles in pocket detection)
J66	PACER (HV WHITE)	Pacer board, P51, PACER RETURN (HV WHITE)

ECG Out Connector

The ECG Out connector connects to J3 on the control board. See Table A-4 for pin assignments.

QRS Volume Control

The QRS volume control connects to J4 on the control board. See Table A-5 for pin assignments.

Defibrillator Connector

The defibrillator connector connects to the control board and the front end board. Table A-20 lists connector pin assignments.

Table A-20 **Defibrillator Connector J1**

From Defibrillator Connector		To Control Board	
Pin	**Signal**	**Pin**	**Signal**
1	nCHARGE	1	nPADCHG
2	CHDONE/PADID	2	nDISCHGA
3	+5V	3	CHDONELED
4	PCI	4	GND
5	nDISCHARGE APEX	5	PADS5V
6	LOGIC GND	6	CGND
7	SHIELD GND	7	PCIDRV
8	nDISCHARGESTERNUM	8	nDISCHGS
From Defibrillator Connector		**To Front End Board**	
A	HI VOLTAGE - APEX	J62A (HV WHITE)	APEX-1
S	HI VOLTAGE - STER-NUM	J61A (HV RED)	STERNUM-1

Signal	Definition
nCHARGE	Apex paddle charge button. Charge is asserted low.
CHDONE/ PADID	Voltage level indicates the type of paddles connected to the instrument. Also used to light the apex paddle charge done LED.
PCI	Patient contact impedance. A voltage which turns on a specific number of LEDs on the sternum PCI LED bar.
nDISCHARGE APEX	A signal asserted when the apex paddle shock button is pressed.
nDISCHARGE STERNUM	A signal asserted when the sternum paddle shock button is pressed.
HI VOLTAGE - APEX	Connects the apex paddle (pad) to the output (-) side of the patient (transfer) relay and to pacer (-) terminal (if the pacer is installed).
HI VOLTAGE - STERNUM	Connects the sternum paddle (pad) to the output (+) side of the patient (transfer) relay and to the pacer (+) terminal if the pacer is installed.

Keypanel Board

These tables list the pin assignments for the connectors on the keypanel board. The connectors and the assemblies they connect to are listed in Table A-21; Table A-22 lists connector pin assignments for J1.

Table A-21 Keypanel Board Connections

Keypanel Board Connector	Via Cable Assembly	Connects To	Reference
A1	p/o M1722-60195	Control board, J6	Table A-7
J2	M1722-61900	Energy Select switch	Table A-22
J3	M1722-61652	SpO_2 board, P2	Table A-23

Table A-22 Keypanel Board J2 to Energy Select Switch

Pin	Signal
1	N/C
2	ENSEL(3)
3	GND
4	ENSEL(2)
5	nON
6	ENSEL(1)
7	ENSEL(0)
8	N/C

Signal	Definition
ENSEL(0), (1), (2), (3)	ENergy SELect. Four key bits set by the Energy Select control, which selects the charge level, or the monitor on position.
nON	Asserted low on all switch positions except the standby position. Turns the instrument on.

Table A-23 **Keypanel Board J3 to SpO_2 Board P2**

Pin	Signal
1	nONOFFKEY
2	nALRMKEY

Signal	Definition
nONOFFKEY	SpO_2 On/Off key
nALRMKEY	SpO_2 Alarm key

Pacer Keypanel Board

The pacer keypanel board J1 connects to the control board, J1. See Table A-2 for pin assignments.

Pacer Board

These tables list the pin assignments for the connectors on the pacer board. The connectors and the assemblies they connect to are listed in Table A-24; Table A-25 lists connector pin assignments for J51 and P51.

Table A-24 **Pacer Board Connections**

Pacer Board Connector	Via Cable Assembly or Wire	Connects To	Reference
J1	M1722-61617	Control board, J7	Table A-8
J51	HV RED	Patient relay (isolated)	Table A-25
P51	HV WHITE	Front end board (Isolated)	Table A-25

Table A-25 **Pacer Board J51, P51**

Pin	Signal	Connection	Signal
J51	PACER +	Patient relay (N.C. 1)	+ PACER
P51	PACER RTN (WHITE HV WIRE)	Front end board, J66	PACER

Signal	Definition
PACER +	Positive polarity of pacer output.
PACER RTN	Pacer output return.

Power Supply Board

These tables list the pin assignments for the connectors on the power supply board. The connectors and the assemblies they connect to are listed in Table A-26; Table A-27 and Table A-28 list connector pin assignments for J2A and J2B.

Table A-26 **Power Supply Board Connections**

Power Supply Connector	Via Cable Assembly	Connects To	Reference
J1	M1722-61607	AC input cable	Table A-27
J2A	M1722-61606	High voltage board, J1	Table A-28
J2B	M1722-61606	Control board, J8	Table A-9

Table A-27 **Power Supply J1 to AC Input Cable**

Pin	Signal
1	LOW LINE (BROWN)
2	IMAGE PLANE (Cable shield); also connects to VDC RETN, GROUND, and YCAPS.
3	HIGH LINE (BLUE)

NOTE

A green/yellow wire from the AC line module connects to the IEC ground lug on the defibrillator rear panel.

Table A-28 **Power Supply J2A to High Voltage Board J1**

Power Supply Board J2A		High Voltage Board J1	
Pin	Signal	Pin	Signal
6	+12R	10	+12B
7	+12R RTN	9	AGROUND
8	VBATT	8	VBATT
9	VBATT	7	VBATT
10	GROUND	6	AGROUND
11	VBATT	5	VBATT
12	VDC	4	VDC
13	VDC RTN	3	AGROUND
14	VDC	2	VDC
15	VDC	1	VDC

NOTE J2A, pins 1 through 5 are not used.

Signal	Definition
12R	12 volt supply
12R RTN	12 volt supply return.
VBATT	Battery voltage
VDC	AC/DC converter voltage

High Voltage Board

These tables list the pin assignments for the connectors on the high voltage board. The connectors and the assemblies they connect to are listed in Table A-29; Table A-30 and Table A-31 list connector pin assignments.

Table A-29 **High Voltage Board Connections**

High Voltage Board	Via Cable Assembly	Connects To	Reference
J1	M1722-61606	Power supply board, J2A	Table A-28
J2	M1722-61610	Control board, J9	Table A-10
J3		HV capacitor and Patient inductor	Table A-30
J5		Patient relay	Table A-30
J6		HV capacitor and patient relay	Table A-30
J8		Patient relay	Table A-30
	p/o M1722-60110	Battery board	Table A-31

Table A-30 **High Voltage Board J3, J5, J6, J8**

Pin	Signal	Connects To
J3-1	HV CAP+	HV capacitor, +HV CAP (RED HV; P/O 0160-7577)
J3-2	HV IND IN	Patient inductor, INDUCTOR IN (RED; P/O M1722-82800)
J5-1	VDC	Patient relay, + PRELAY DRIVE (P/O M1722-82806)
J5-2	AGROUND	Patient relay, GROUND
J5-3	RELAYRTN	Patient relay, - PRELAY DRIVE
J6-1	HV CAP -	HV capacitor, - HV CAP (WHITE HV; P/O 0160-7577)
J6-2	PR COM 2	Patient relay, - HV CAP (COMMON 2) (P/O M1722-82806)
J8	PR N.C. -2	Patient relay, - CHARGER (N.C. 2) (P/O M1722-82806)

Signal	Definition
HV CAP+	Positive terminal of the high voltage capacitor; flying lead terminated by a 0.187 female faston.

Signal	Definition
HV IND IN	Input side of the waveshaping inductor.
VDC	AC/DC converter voltage.
RELAYRTN	Relay Return.
HV CAP -	Negative lead of HV capacitor; flying lead terminated by a 0.187 female faston.
PR COM 2	Patient Relay, Common 2.
PR N.C. 2	Patient Relay, Normally Closed 2.

Table A-31 **High Voltage Board to Battery Board**

Signal	Via Cable Assembly	Connects To
nBATPRES	Blue	Battery board, BAT-SENS
VBATT	Red	Battery board, BAT+FUSE
AGROUND	Black	Battery board, BAT–

Signal	Definition
nBATPRES	Asserted low when a battery is connected.
VBATT	Fused battery voltage.
AGROUND	Return path for battery voltage.

Patient Inductor

These tables list the pin assignments for the connectors on the patient inductor. The connections are listed in Table A-32.

Table A-32 **Patient Inductor**

Patient Inductor	Connects To
IPEAK +5V	Control board, J10-1, IPEAK5V
IPEAK	Control board, J10-2, IPEAK
INDUCTOR IN (RED)	High voltage board, J3-2, HV INDUCTOR IN
INDUCTOR OUT (RED)	Patient relay, +HV CAP (N.O. 1) (RED)

Signal	Definition
IPEAK +5V	Supply for Ipeak transformer measurement.
IPEAK	Ipeak transformer output (used by Ipeak measurement circuitry.
INDUCTOR IN	Input side (H.V capacitor) of waveshaping inductor.
INDUCTOR OUT	Output side (patient) of waveshaping inductor.

CRT Deflection Board

On the CRT deflection board, J1 connects to J11 on the control board. The pin assignments are the same on both connectors. See Table A-12 for pin assignments.

Table A-33 **CRT Deflection Board Connections**

CRT Deflection Board Connector	Connects To	Reference
J1	Control board, J11	Table A-12
J2	CRT Deflection yoke	Table A-34

Table A-33 **CRT Deflection Board Connections**

CRT Deflection Board Connector	Connects To	Reference
J3	CRT Socket board	Table A-35
J4	CRT Socket board	Table A-36

NOTE

The CRT socket board J5 connects to J5 on the CRT tube socket.

Table A-34 **CRT Deflection Board J2 to CRT Deflection Yoke**

Pin	Signal
1	VCOILRET (BLUE)
2	VCOILOUT (RED)
3	GND (BLACK)
4	HCOILOUT (GREEN)
5	HCOILRET (YELLOW)

NOTE

Each pin on the CRT deflection board J2 connects to a pin with the same number on the CRT deflection yoke, as shown in Table A-34.

Signal	Definition
VCOILRET	Vertical deflection coil return.
VCOILOUT	Vertical deflection coil drive.
HCOILOUT	Horizontal deflection coil drive.
HCOILRET	Vertical deflection coil return.
GND	Tied to DAG ground of CRT, through single screw attaching PC board to CRT frame.

Table A-35 **CRT Deflection Board J3 to CRT Socket Board J5**

CRT Deflection Board J3		CRT Socket J5
Pin	Signal	Pin
J3-1	GND	J5-3
J3-2	VIDEOOUT	J5-2
J3-3	GND	J5-3
J3-4	+12V	J5-4

Signal	Definition
VIDEOOUT	Video control voltage: +28V = dot off, +4.3V = half bright, 0.0V full bright.
12V	12 volt supply
GND	Ground

Table A-36 **CRT Deflection Board J4 to CRT Socket Board J5**

CRT Deflection Board J4		CRT Socket J5
Pin	Signal	Pin
J4-1	INTENS	J5-1
J4-2	GRID-2	J5-6
J4-3	FOCUS	J5-7

Signal	Definition
INTENS	Display intensity (adjustable: -3.9V to 0.0V)
GRID-2	CRT Grid bias voltage (adjustable: 0V to +200 V

SpO_2 Board

On the SpO_2 board, P1 connects to J12 on the control board. The pin assignments are the same on both connectors. See Table A-13 for pin assignments. Table A-37 lists connections on the SpO_2 board.

Table A-37 **SpO_2 Board Connections**

SpO_2 Board	Via Cable Assembly	Connects To	Reference
P1	M1722-61628	Control board, J12	Table A-13
P2	M1722-61651	Front keypanel board	Table A-23
P101	M1722-61651	SpO_2 input connector	Table A-38

Table A-38 **SpO_2 Board to SpO_2 Input Connector**

SpO_2 Board		SpO2 Input Connector	
Pin	Signal	Pin	Signal
1	SIGNAL	1	SIGNAL
2	FGND	A	FGND
3	REXT1	3	REXT1
4	REXT2	5	REXT2
5	LEDSENCE	6	LEDSENSE
6	LEDDR	7	LEDDR
7	FGND	2	FGND

SIGNAL — Received optical current.

FGND — SpO_2 isolated ground.

REXT1 — Cable coding resistor #1.

REXT2 — Cable coding resistor #2.

LEDSENCE — Detected current through LEDs.

LEDDR — Drive current for LEDs.

Recorder Interface Board

On the recorder interface board, J1 connects to J13 on the control board. The pin assignments are the same on both connectors. See Table A-14 for pin assignments.

Battery Board

Table A-39 lists connections on the battery board.

Table A-39 Battery Board Connections

Battery Board	Via Cable Assembly	Connects To	Reference
	p/o M1722-60110	High voltage board	Table A-31
J4		Battery assembly, J1	Table A-40

Table A-40 Battery Board J4 to Battery Assembly J1

Pin	Signal
1	BAT+
2	BAT+
3	BAT+SLOW
4	BAT-SENS
5	BAT-
6	BAT-

NOTE

Each pin on the battery board J4 connects to a pin with the same number on the battery assembly.

Signal	Definition
BAT+	Positive terminal of battery.
BAT+SLOW	Connection first made by the long pin in the battery connector; limits current when initially charging capacitance on the VBATT line.
BAT-SENS	Battery Sense.
BAT–	Battery return. Connects to negative terminal of battery.

Battery Assembly

The battery assembly connects to the J4 on the battery board. See Table A-40 for pin assignments.

HV Capacitor

The HV capacitor connects to the high voltage board, J3 and J6. See Table A-30 for pin assignments.

Patient Relay

Table A-41 lists the connection points for the patient relay.

Table A-41 Patient Relay

Patient Relay	Connects To
- CHARGER (N.C. 2)	High voltage board, J8
+ HV CAP (N.O. 1)	Patient inductor, INDUCTOR OUT
- HV CAP (COMMON 2)	High voltage board, J6-2
+ PRELAY DRIVE	High voltage board, J5-1
GROUND	High voltage board, J5-2
- PRELAY DRIVE	High voltage board, J5-3
+ PACER (N.C. 1)	Pacer board, J51
OUTPUT + (COMMON 1)	Front end board, J61B
OUTPUT - (N.O. 2)	Front end board, J62B

50-Ohm Load Assembly

The 50-ohm load assembly connects to J63 on the front end board. See Table A-19 for pin assignment. In addition, the TO STERNUM point on the assembly connects to the sternum paddle pocket; the TO APEX point on the assembly connects to the apex paddle pocket.

ECG In Connector

The ECG In connector connects to J1 on the front end board. See Table A-16 for pin assignments.

AC Line Module

The AC line module connects to J1 on the power supply board. See Table A-27 for pin assignments. In addition, the GROUND connection on the AC line module goes through a green/yellow wire to the IEC ground lug.

Energy Select Switch

The Energy Select switch connects to J2 on the keypanel board. See Table A-22 for pin assignments.

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